

CLAIMS

1. Cooking apparatus comprising:
 - an enclosure having a food support for an article of food to be cooked, and a fuel support for solid fuel, the supports being having food supporting and fuel supporting areas respectively, said areas being displaced from each other sufficiently that cooking of a food article on said food supporting area by fuel on said fuel supporting area can take place, at least in substantial part, as a result of contact between said food article and hot gas produced by combustion of said fuel;
 - an impeller arranged to cause air to flow from the exterior of said enclosure into the interior thereof, and to impinge upon solid fuel on said fuel supporting area;
 - an electric motor arranged to operate the impeller;
 - a first temperature sensor for sensing the temperature of the atmosphere within said enclosure in the vicinity of an article of food on said food support, and providing a first output signal;
 - a second temperature sensor for sensing the internal temperature of a food article on said food support and providing a second output signal;
 - a controller, responsive to said first output signal, for controlling operation of said electric motor, said controller causing the impeller to increase the flow of air into the interior of said enclosure with decreasing temperature of said atmosphere and to decrease said flow of air with increasing temperature of said atmosphere, whereby said atmosphere is maintained substantially at a set point temperature;

said controller being also responsive to said second output signal for reducing said set point temperature as the internal temperature of said food article increases.

2. Cooking apparatus according to claim 1, in which said controller includes an adjuster for setting a target temperature for the internal temperature of the food article, and reduces said set point temperature gradually toward a level exceeding said target temperature by a predetermined amount.

3. Cooking apparatus according to claim 1, in which said controller includes a first adjuster for setting a target temperature for the internal temperature of the food article, and reduces said set point temperature gradually toward a level exceeding said target temperature by a predetermined amount, and a second adjuster for setting a maximum temperature for said atmosphere within said enclosure.

4. Cooking apparatus according to claim 1, in which said enclosure has an internal wall, and including a deflector for directing a stream of air from said impeller along said internal wall toward said fuel supporting area, whereby said stream of air is prevented from reaching said first temperature sensor before it reaches fuel on said fuel supporting area.

5. Cooking apparatus according to claim 1, in which said controller controls said flow of air by alternately switching electrical power to said electric motor on and off, and causes the impeller to increase and decrease said

flow of air by varying the duty cycle of said electric motor.

6. . . Cooking apparatus according to claim 1, in which said controller controls said flow of air by establishing sequentially repeating fixed intervals of time, and alternately switching electrical power to said electric motor on once and off once in each such fixed interval of time, and causes the impeller to increase and decrease said flow of air by varying the proportion of each such fixed interval of time during which electrical power to said electric motor is switched on.

7. . . Cooking apparatus according to claim 1, in which said enclosure is substantially free of openings providing paths for convective flow of external air to said fuel supporting area.

8. . . Cooking apparatus comprising:
an enclosure having a food support and a solid fuel support;
an impeller arranged to cause air to impinge upon solid fuel on said solid fuel support;
a first temperature sensor for sensing the temperature of the atmosphere within said enclosure in the vicinity of an article of food on said food support;
a second temperature sensor for sensing the internal temperature of a food article on said food support;
a controller, responsive to said temperature sensors, for operating said impeller, said controller causing the flow of air toward said solid fuel to maintain the temperature of said atmosphere

within said enclosure substantially at a set point determined by the internal temperature sensed by said second temperature sensor, and reducing said set point as said internal temperature increases.

9. Cooking apparatus according to claim 8, in which said controller includes an adjuster for setting a target temperature for the internal temperature of the food article, and reduces said set point temperature gradually toward a level exceeding said target temperature by a predetermined amount.

10. Cooking apparatus according to claim 8, in which said controller includes a first adjuster for setting a target temperature for the internal temperature of the food article, and reduces said set point temperature gradually toward a level exceeding said target temperature by a predetermined amount, and a second adjuster for setting a maximum temperature for said atmosphere within said enclosure.

11. Cooking apparatus according to claim 8, in which said enclosure has an internal wall, and including a deflector for directing a stream of air from said impeller along said internal wall toward said fuel supporting area, whereby said stream of air is prevented from reaching said first temperature sensor before it reaches fuel on said fuel support.

12. Cooking apparatus according to claim 8, in which said controller controls said flow of air by operating said impeller intermittently.

13. Cooking apparatus according to claim 8, in which said controller controls said flow of air by establishing sequentially repeating fixed intervals of time, and operating said impeller intermittently during a portion of each said fixed interval of time, and causing the impeller to increase and decrease said flow of air by varying the proportion of each such fixed interval of time during which impeller is operated.

14. Cooking apparatus according to claim 8, in which said enclosure is substantially free of openings providing paths for convective flow of external air to said fuel supporting area.

15. A method of cooking comprising:
burning solid fuel inside an enclosure, said enclosure also containing food to be cooked;
sensing an internal temperature in said food;
sensing a temperature of a gaseous atmosphere within said enclosure in the vicinity of said food;
causing air to flow from the exterior of said enclosure into the interior of said enclosure and toward said solid fuel by means of an impeller, said air being directed so that it reaches the vicinity of said solid fuel before its temperature is sensed in the gaseous atmosphere temperature sensing step;
in response to the sensed internal temperature of said food and the sensed temperature of said gaseous atmosphere, controlling the flow of air toward said solid fuel, thereby maintaining the temperature of said atmosphere within said enclosure substantially at a set point determined by the internal temperature, and reducing said

set point as said internal temperature in said food increases. .

16. A method of cooking according to claim 15, including the step of setting a target temperature for the internal temperature of the food article, and reducing said set point temperature gradually toward a level exceeding said target temperature by a predetermined amount.

17. A method of cooking apparatus according to claim 15, including the step of deflecting a stream of air from said impeller, thereby directing said stream of air toward said fuel, whereby said stream of air reaches the fuel before its temperature is sensed in the step of sensing a temperature of a gaseous atmosphere within said enclosure in the vicinity of said food

18. A method of cooking according to claim 15, in which said flow of air is controlled by operating said impeller intermittently.

19. A method of cooking according to claim 15, in which said flow of air is controlled by establishing sequentially repeating fixed intervals of time, operating said impeller intermittently during a portion of each said fixed interval of time, and causing the impeller to increase and decrease said flow of air by varying the proportion of each such fixed interval of time during which impeller is operated.

20. A method of cooking according to claim 15, in which convective flow of external air to said fuel is substantially avoided by maintaining said enclosure

substantially free of openings providing paths for convective flow of external air to said fuel.